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**FINANCIAL STATEMENT FRAUD: DETECTING FINANCIAL  
STATEMENT MANIPULATION IN MALAYSIAN PUBLIC LISTED  
COMPANIES USING BENEISH M-SCORE MODEL**



**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
University Utara Malaysia,  
in Partial Fulfillment of the Requirement for the Master of Science (Finance)**



**Pusat Pengajian Ekonomi,  
Kewangan dan Perbankan**

SCHOOL OF ECONOMICS, FINANCE, AND BANKING

**Universiti Utara Malaysia**

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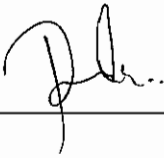
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MALAYSIAN PUBLIC LISTED COMPANIES USING BENEISH M-SCORE MODEL**

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## ABSTRAK

Kajian ini berusaha untuk menaksir kebolegunaan Model Beneish M-Score dalam mengesan penyelewengan penyata kewangan daripada perspektif Malaysia. Selain itu, kajian ini juga berusaha untuk mengenalpasti maklumat dalam penyata kewangan yang dapat memberi petunjuk syarikat yang terlibat dalam penyelewengan dan mengenalpasti hubungan antara pembolehubah-pembolehubah dalam Model Beneish M-Score. Kajian ini menggunakan beberapa kaedah analisa bagi mendapatkan kesimpulan. Pertama, kajian ini menggunakan Model Beneish M-Score yang terdiri daripada lapan (8) pembolehubah; DSRI, GMI, AQI, SGI, DEPI, SGAI dan TATA. Melalui pembolehubah-pembolehubah ini, kajian akan memperolehi indeks M-Score dan berdasarkan indeks ini, kajian boleh menyimpulkan bahawa jika  $M\text{-Score} > -2.22$ , syarikat akan diklasifikasikan sebagai pamanipulasi dan jika  $M\text{-Score} < -2.22$ , syarikat akan diklasifikasikan sebagai bukan pamanipulasi. Kedua, kajian ini menggunakan analisa Mann-Whitney U untuk mengenalpasti maklumat dalam penyata kewangan yang dapat memberi petunjuk syarikat yang terlibat dalam penyelewengan. Ketiga, kajian ini menggunakan analisa Granger Causality untuk mengkaji hubungan antara pembolehubah-pembolehubah. Berdasarkan analisa, Model Beneish berjaya mengesan 28 syarikat daripada 33 syarikat yang memanipulasi penyata kewangan dengan kadar kejayaan sebanyak 84.8%. Selanjutnya, dalam kelapan-lapan (8) pembolehubah ini, pihak berkepentingan boleh menumpukan pada tiga (3) pembolehubah yang mempunyai perbezaan ketara secara statistik antara syarikat pamanipulasi dan bukan pamanipulasi. Ia adalah DSRI, GMI dan SGAI. Akhir sekali, pihak yang berkepentingan perlu mengetahui bahawa terdapat empat (4) pembolehubah yang boleh mempengaruhi lima (5) pembolehubah yang lain. Ia adalah

GMI penyebab Granger DEPI, SGI penyebab Granger DSRI dan GMI, LVGI penyebab Granger SGAI dan SGAI penyebab Granger SGI. Model Beneish M-Score dapat membantu menganalisa sama ada terdapat manipulasi dalam penyata kewangan sesebuah syarikat dan membantu membuat keputusan yang tepat. Walaubagaimanapun, ia bukanlah suatu jaminan bahawa Model ini boleh mengesan penyelewengan, tetapi boleh dijadikan sebagai cetusan punca atau bendera merah dalam mengesan penyelewengan. Tidak ada jaminan bahawa analisa akan 100% tepat. Selain daripada itu, bagi mendapat keputusan yang tepat, pihak berkepentingan juga perlu mengambil berat mengenai isu tadbir urus korporat.

Kata Kunci: Penipuan, Penyelewengan, Penyata Kewangan, Penyelewengan Penyata Kewangan, Segitiga Penyelewengan, Manipulasi Pendapatan, Model Beneish M-Score.

## ABSTRACT

This study attempts to assess the applicability of Beneish M-Score Model in detecting financial statement fraud from Malaysian perspective. Furthermore, the study also attempts to identify which financial statement information that may indicate the company engaged in fraud and to examine the relationship amongst variables in Beneish M-Score Model. The study uses several analysis methods to arrive at the conclusion. First, the study uses Beneish M-Score Model which consists of eight (8) variables; DSRI, GMI, AQI, SGI, DEPI, SGAI and TATA. From these variables, the study will derive to M-Score index. Based on the M-Score index, the study may conclude the Dependent Variables; if  $M\text{-Score} > -2.22$  the companies will be classified as manipulators and if  $M\text{-Score} < -2.22$  the companies will be classified as non-manipulators. Second, the study uses Mann-Whitney U Test to identify which financial statement information may indicate the company engaged in fraud. Third, the study uses Granger Causality Test to examine the relationship amongst the variables. From the analysis, Beneish Model has successfully detected 28 companies out of 33 companies that manipulated their financial statements with successful rate of 84.8%. Furthermore, among the eight (8) variables, stakeholders may focus on three (3) variables that have statistically significant differences between manipulator and non-manipulator companies. There are Days' Sales in Receivables Index (DSRI), Gross Margin Index (GMI) and Selling, General and Administration Expenses Index (SGAI). Last but not least, stakeholders need to know there are four (4) variables may give cause and effect to or will influence the other five (5) variables. There are; GMI Granger Cause DEPI, SGI Granger Cause DSRI and GMI, LVGI Granger Cause SGAI and SGAI Granger Cause SGI. Beneish M-Score Model may assist

stakeholders to analyse whether there were manipulations in the financial statement of a company and help them to make wise decision. However, it is not the holy grail of fraud detection, but may trigger the red flag of fraud. There is no assurance that the analysis will be 100% accurate. To become wise decision maker, stakeholders also need to be concerned on the corporate governance issues.

Keywords: Fraud, Financial Statements, Financial Statement Fraud, Fraud Triangle, Earnings Manipulation, Beneish M-Score Model.





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## LIST OF ABBREVIATIONS

ACFE	Association of Certified Fraud Examiners
MASB	Malaysian Accounting Standard Board
ACE Market	Access, Certainty, Efficiency Market
PN17	Practice Note 17
GN3	Guidance Note 3
PwC	PriceWaterhouse Coopers
KPMG	Klynveld Peat Marwick Goerdeler
DSRI	Days' Sales in Receivables Index
GMI	Gross Margin Index
AQI	Assets Quality Index
SGI	Sales Growth Index
SGAI	Selling, General and Administration Expenses Index
DEPI	Depreciation Index
LVGI	Leverage Index
TATA	Total Accruals to Total Assets

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Past few decades, corporate scandals have made thousands of peoples lose their money and jobs. World famous corporate scandals such as Waste Management Scandal in 1998, explosion of Enron Scandal in 2001, WorldCom and Tyco Scandals in 2002, HealthSouth and Freddie Mac Scandal in 2003, American Insurance Group in 2005 and etc. have changed the corporate landscape in dealing with fraud and governance practices by the introduction of Sarbanes-Oxley Act 2002 (U.S. Securities and Exchange Commission, 2002).

Malaysia is no exception. There were several famous corporate scandals which after the occurrence have improved the Malaysian corporate governance practices such as Repco Holdings Berhad in 1997, Renong Berhad in 1999, Transmile Group Berhad in 2005, Scan Associates Berhad in 2006, Megan Media Holdings Berhad in 2007, Kenmark Industrial Co. Berhad in 2009 and many more (Zayed Zulkifli, 2014).

According to Nelson (2012), the implication of fraudulent financial statement will become a catastrophic risk in order to gain stakeholders' confidence over the financial information. According to the Global Economic Crime Survey 2016 Report conducted by PwC Global stated that financial losses from financial



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## APPENDIX

**Table 1: List of Companies listed as PN17, GN3 and Companies Proven Committed Fraud**

No.	Name of Company	Remarks
1.	Asia Knight Berhad	PN17
2.	CN Asia Corporation Berhad	PN17
3.	Haisan Resources Berhad	PN17
4.	HB Global Limited	PN17
5.	JAVA Berhad	PN17
6.	Kuantan Flour Mills Berhad	PN17
7.	LFE Corporation Berhad	PN17
8.	LION Corporation Berhad	PN17
9.	Malaysia Pacific Corporation Berhad	PN17
10.	Nakamichi Corporation Berhad	PN17
11.	Perwaja Holdings Berhad	PN17
12.	Petrol One Resources Berhad	PN17
13.	TPC Plus Berhad	PN17
14.	YFG Berhad	PN17
15.	EKA Noodles Berhad	PN17
16.	LION Diversified Holdings Berhad	PN17
17.	Maxwell International Holdings Berhad	PN17
18.	Wintoni Group Berhad	GN3
19.	Asiaep Resources Berhad	GN3
20.	CyberTowers Berhad	GN3
21.	Diversified Gateway Solutions Berhad	GN3
22.	R&A Telecommunication Group Berhad	GN3
23.	Scan Associates Berhad	GN3
24.	Transmile Group Berhad	Proven Fraud
25.	Kenmark Industrial Co. (M) Berhad	Proven Fraud
26.	Megan Media Holdings Berhad	Proven Fraud
27.	Linear Corporation Berhad	Proven Fraud
28.	Golden Plus Holdings Berhad	Proven Fraud
29.	DIS Technology Holdings Berhad	Proven Fraud
30.	WELLI Multi Corporation Berhad	Proven Fraud
31.	Fountain View Development Berhad	Proven Fraud
32.	Iris Corporation Berhad	Proven Fraud
33.	Axis Incorporation Berhad	Proven Fraud

*Source: Bursa Malaysia, September 2016 & Zayed Zulkifli, 2014.*